REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-6 are currently pending. No claim amendments are presented, thus, no new matter is added.

In the outstanding Office Action, Claims 1-5 were rejected under 35 U.S.C. §102(b) as being anticipated by Hadjicostis et al. (U.S. Patent No. 5,924,993, hereafter "Hadjicostis"); and Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hadjicostis.

With respect to the rejection of Claim 1 under 35 U.S.C. §102(b), Applicant respectfully traverses this ground of rejection. Claim 1 recites,

> A digital receive-focusing apparatus for use in an ultrasound imaging system comprising:
>
> a plurality of channel modules responsive to ultrasound channel signals, and configured to produce a receive-focused beam, each of said plurality of channel modules including,
>
> i) means for multiplexing ultrasound signals originating from at least two ultrasound channels; and
>
> ii) means for digitally processing and compensating said multiplexed ultrasound signal.

As shown above, Claim 1 recites a digital receive-focusing apparatus including a plurality of channel modules. Claim 1 further recites that each of the channel modules has multiplexing means configured to multiplex ultrasound signals originating from at least two ultrasound channels. Applicant submits that the invention defined by Claim 1 simplifies the hardware structure of an ultrasound imaging system (see specification, for example, page 6, lines 10-17).

Hadjicostis is directed to an intravascular ultrasound mixed signal multiplexer/pre-amplifier circuit. Fig. 1 of Hadjicostis shows a system that includes four multiplexer (MUX) pre-amplifier chips (10-1, 10-2, 10-3, and 10-4).

The Office Action takes the position that the MUX chips 10-1 to 10-4 of Hadjicostis correspond to the claimed "a plurality of channel modules responsive to ultrasound channel signals, and configured to produce a receive-focused beam, each of said plurality of channel modules including, i) means for multiplexing ultrasound signals originating from at least two ultrasound channels." However, Hadjicostis discloses that the MUX pre-amplifier chips are for use in an intralumen visualization system (see col. 3, lines 23 – 40). A MUX of Hadjicostis is included in an array subsystem positioned at a distal end of the catheter, which is inserted through a lumen of a patient (see col. 3, lines 38-40). Also, Hadjicostis describes that only the necessary minimum amount of components are packaged within the distal catheter end because of the extreme space limitations (see col. 3, lines 48 – 62). All other components are packaged external to the catheter. The external system architecture includes data acquisition boards communicating with a central processing unit (CPU) running beamformer software (see col. 3, lines 53-58). This means that the beamforming is carried out by the external system and not the MUX. Therefore, the MUX of Hadjicostis is not adapted for "producing a receive focus beam," as defined in Claim 1. In Hadjicostis, the MUX is merely used to supply voltages to elements of an ultrasound array and receive voltages from the elements of the array (see Abstract). Thus, the MUX of Hadjicostis does not provide the advantage of simplifying the hardware structure of the digital receive-focusing apparatus as is provided with the invention defined by Claim 1.

Therefore, Hadjicostis fails to disclose or suggest "a plurality of channel modules responsive to ultrasound channel signals, and configured to produce a receive-focused beam, each of said plurality of channel modules including, i) means for multiplexing ultrasound

signals originating from at least two ultrasound channels; and ii) means for digitally processing and compensating said multiplexed ultrasound signal," as defined by Claim 1.

Therefore, Applicant respectfully submits that Claim 1 (and all associated dependent claims) patentably distinguishes over Hadjicostis.

With respect to the rejection of Claim 6 under 35 U.S.C. §103(a), Applicant respectfully traverses this ground or rejection. Claim 6 recites, *inter alia*,

> a plurality of channel modules responsive to ultrasound channel signals, and configured to produce a receive-focused beam, each of said plurality of channel modules including, and
>
> an analogue multiplexer configured to multiplex ultrasound signals originating from at least two ultrasound channels.

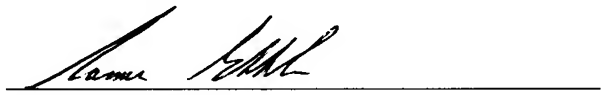
As discussed above, Hadjicostis does not describe a plurality of channel modules which produce a received-focus beam and which each include a multiplexer that multiplexes ultrasound signals originating from at least two ultrasound channels, as defined in Claim 6.

Therefore, Applicant respectfully submits that Claim 6 patentably distinguishes over Hadjicostis, for similar reasons as discussed above with regard to Claim 1.

Consequently, in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Sameer Gokhale
Registration No. 62,618

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

I:\ATTY\SG\24's\240366US\240366US REQ FOR RECONSIDERATION DUE 09-16-08.DOC